

In re Patent Application of
ERRATICO
Serial No. 09/899,573
Filed: 07/05/2001

In the Claims:

12. (Currently amended) An integrated structure comprising:

a substrate having a first conductivity type;
an epitaxial layer on said substrate and having the first conductivity type and a conductivity less than a conductivity of said substrate;

first and second regions in said epitaxial layer each having a second conductivity type opposite the first conductivity type, said first and second regions extending from a surface of said epitaxial layer opposite said substrate into said epitaxial layer to form respective first and a second junctions therewith; and

first and second electrodes for independently biasing the first and second junctions, respectively; and

an isolating element positioned between said first and said second regions and extending from the surface of said epitaxial layer at least as far as a top surface of said substrate for reducing an injection of current through said epitaxial layer from said first region to said second region when the first junction is directly and second junctions are oppositely biased, said isolating element comprising a dielectric material adjacent said epitaxial layer and polycrystalline silicon spaced apart from said epitaxial layer by said dielectric material, said isolating element also terminating above a bottom surface of said substrate.

In re Patent Application of

ERRATICO

Serial No. 09/899,573

Filed: 07/05/2001

13. (Original) The integrated structure according to Claim 12 wherein said isolating element at least partially surrounds said first region.

14. (Original) The integrated structure according to Claim 12 wherein said integrated structure is formed on a semiconductor chip; and wherein said isolating element has a length substantially equal to a width of the semiconductor chip and divides the semiconductor chip into two portions each respectively including said first region and said second region.

15. (Original) The integrated structure according to Claim 12 wherein the first conductivity type is P type.

16. (Original) The integrated structure according to Claim 12 wherein said first region comprises a power transistor for controlling an inductive load.

17. (Currently amended) An integrated structure comprising:

- a substrate having a first conductivity type;
- an epitaxial layer on said substrate and having the first conductivity type and a conductivity less than a conductivity of said substrate;

- first and second regions in said epitaxial layer each having a second conductivity type opposite the first conductivity type, said first and second regions extending from a surface of said epitaxial layer opposite said substrate

In re Patent Application of
ERRATICO
Serial No. 09/899,573
Filed: 07/05/2001

03
cont.
into said epitaxial layer to form respective first and a second junctions therewith; and

first and second electrodes for independently biasing the first and second junctions, respectively; and

an isolating element positioned between said first and said second regions and extending from the surface of said epitaxial layer at least as far as a top surface of said substrate for reducing an injection of current through said epitaxial layer from said first region to said second region when the first and second junctions are oppositely biased, said isolating element partially surrounding at least one of said first and second regions, said isolating element also terminating above a bottom surface of said substrate.

18. (Original) The integrated structure according to Claim 17 wherein said isolating element comprises a dielectric material.

19. (Original) The integrated structure according to Claim 18 wherein said isolating element further comprises polycrystalline silicon.

20. (Original) The integrated structure according to Claim 17 wherein the first conductivity type is P type.

21. (Original) The integrated structure according to Claim 17 wherein said first region comprises a power transistor for controlling an inductive load.

In re Patent Application of

ERRATICO

Serial No. 09/899,573

Filed: 07/05/2001

22. (Currently amended) An integrated structure formed on a semiconductor chip and comprising:

a substrate having a first conductivity type;

an epitaxial layer on said substrate and having the first conductivity type and a conductivity less than a conductivity of said substrate;

first and second regions in said epitaxial layer each having a second conductivity type opposite the first conductivity type, said first and second regions extending from a surface of said epitaxial layer opposite said substrate into said epitaxial layer to form respective first and a second junctions therewith; ~~and~~

first and second electrodes for independently biasing the first and second junctions, respectively; and

an isolating element positioned between said first and said second regions and extending from the surface of said epitaxial layer at least as far as a top surface of said substrate for reducing an injection of current through said epitaxial layer from said first region to said second region when the first and second junctions are oppositely biased, said isolating element having a length substantially equal to a width of the semiconductor chip and dividing the semiconductor chip into two portions each respectively including said first and said second regions, said isolating element also terminating above a bottom surface of said substrate.

In re Patent Application of

ERRATICO

Serial No. 09/899,573

Filed: 07/05/2001

23. (Original) The integrated structure according to Claim 22 wherein said isolating element comprises a dielectric material.

24. (Original) The integrated structure according to Claim 23 wherein said isolating element further comprises polycrystalline silicon.

25. (Original) The integrated structure according to Claim 22 wherein the first conductivity type is P type.

26. (Original) The integrated structure according to Claim 22 wherein said first region comprises a power transistor for controlling an inductive load.